

## DOCKETED

<b>Docket Number:</b>	15-IEPR-12
<b>Project Title:</b>	Nuclear Power Plants
<b>TN #:</b>	204588
<b>Document Title:</b>	Gene Nelson, Ph.D. Comments: Summary of Californians for Green Nuclear Power Filings in Support of DCPD
<b>Description:</b>	N/A
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*Comment Received From: Gene Nelson, Ph.D.*

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## **Summary of CGNP Filings in Docket 15-IEPR-12 in Support of DCP**

For the convenience of the California Energy Commission, a tabular summary of all of the 231 pages of comments to date made by Californians for Green Nuclear Power (CGNP) <http://www.CGNP.org> in response to CEC Docket 15-IEPR-12 is found in the first five pages. A spreadsheet follows with live links to each of the comments. Both the table and spreadsheet are sorted by the order in which the docket entries were made.

*Additional submitted attachment is included below.*

**15-IEPR-12 Docket Log Summary for submissions by Gene Nelson, Ph.D. and Californians for Green Nuclear Power (CGNP) as of 11 May 2015**

**TN 203964**, Docketed 26 March 2015: 2 page summary of CGNP advocacy for Diablo Canyon Power Plant (DCPP) once-through-cooling (OTC) alternative compliance by utilizing the SWRCB "Appendix A" amendments

**TN 204274**, Docketed 21 April 2015: 2 page summary including executive summary advocating for alternative compliance and the table of contents of the 45-page CGNP packet submitted to the SWRCB on 03 February 2015. (There were technical difficulties with submission of large attachments to the CEC website that day.)

**TN204275**, Docketed 21 April 2015: The complete 45-page CGNP packet submitted to the SWRCB on 03 February 2015. The key finding was that forcing DCP's owners to retrofit DCP with salt-water-cooled cooling towers to comply with federal Clean Water Act( CWA) 316(B) legislation would cause unacceptable safety risks to DCP and provide scant benefits regarding sea life impingement relative to the multi-billion dollar costs of the dangerous retrofit. In recognition of the emissions-free environmental benefits of generating extremely large amounts of electrical power, the CWA 316(B) legislation provides options to waiver nuclear power plants, particularly in light of the safety risks cited and the benefits being wholly out of proportion to the retrofit costs.

**TN204278**, Docketed 21 April 2015: 66 pages, including summary. The Energy Institute at Haas at the University of California at Berkeley studied the effects of the premature forced closure of San Onofre Nuclear Generation Station (SONGS) in February, 2012. They concluded that there were significant power line transmission constraints that prevented ratepayers in the area previously served by SONGS from receiving the most economical power available. As a result, regional gas-fired generators were utilized, increasing air pollution and emissions. Quoting from the abstract, .... We find that in the months following the closure, almost all of the lost generation from SONGS was met by natural gas plants inside California at an average cost of \$66,000 per hour.....The transmission constraints also made it potentially more profitable for certain plants to exercise market power, *and we find evidence that one company, in particular, may have acted non-competitively* (emphasis added).. ..

and from the conclusion:

Conclusion: *We find that the SONGS closure increased the private cost of electricity generation in California by about \$369 million*, (emphasis added) and the social cost of emissions from generation by about \$331 million, during the first twelve months. Of this, \$39 million reflects transmission constraints and other physical limitations of the grid that necessitated that a high fraction of lost generation be met by plants located in the Southern part of the state. These

constraints also increased the scope for market power, and we find evidence that one company, in particular, may have acted non-competitively.....

These data support the estimate that ratepayers will pay about \$3.3 billion more for electric power over the projected life of SONGS had a license extension been granted, as noted in Docket submission TN 204275.

**TN 204314**, Docketed 23 April 2015. 5 pages, including summary. The article, "The Ten Biggest Power Plants In America -- Not What You Think" by James Conca, Ph.D. 20 April 2015, blog at Dr. Conca's Forbes.com website. This article highlighted the ten biggest power plants in the United States as measured by total electric power generated annually. In 2014, nuclear power plants occupied the top four positions and seven of the top ten. Measured by 2011 power production, DCPD would be just below number 13 in the rankings. DCPD's large generation capability implies that it is important in maintaining grid stability (the match between supply and demand.) In a subsequent Docket Entries TN 204522 and TN 204530, additional detail is provided. **These three docket entries establish that DCPD is the largest generator of electric power in California . Therefore the loss of DCPD would seriously harm California grid stability.**

**TN 204381**, Docketed 27 April 2015, 10 pages. Some samples of the media coverage of the groundbreaking CGNP citizen advocacy for the continued safe operation of DCPD are included. CGNP depends only on contributions of its members to defray necessary expenses. CGNP does not obtain intervenor funds from the California PUC, nor does it receive funding from any corporate body.

**TN 204426**, Docketed 29 April 2015, 4 pages, including summary. Media coverage of Governor Brown's Executive Order B-30-15 establishing aggressive new targets for emissions reductions on 29 April 2015. The only practical, cost-effective means to accomplish these important goals will be to remove the legal impediments to building additional California nuclear power generation capacity. This nuclear power generation could power millions of electric vehicles and provide much-needed energy for the construction of additional desalination facilities to supply water to drought-parched California.

**TN 204427**, Docketed 29 April 2015, 6 pages, including summary. A critique of wind generation of power with a focus on failures in California from the **UK Daily Mail**, 18 March 2012. A key question asked about the low capacity factor (CF) of wind generation is, " Why, they ask, should the debt-laden country be giving wind energy companies a 30 per cent tax credit, costing taxpayers nearly \$3 billion a year, when wind accounts for only 2.3 per cent of America's electricity." While nuclear power and wind generation are both emissions-free, nuclear power is far more cost effective, reliable, and safe.

**TN 204429**, Docketed 29 April 2015, 4 pages, including summary. Media account of the Nuclear Regulatory Commission (NRC) and a panel of independent seismologists reaffirming DCP's seismic safety during a highly-technical four-hour-long teleconference from NRC headquarters. This NRC reaffirmation of DCP's seismic safety stands in stark contrast to the alarmist claims being raised by PUC-funded intervenors such as the Alliance for Nuclear Responsibility, The Utility Reform Network, and the Friends of the Earth, among others.

**TN 204430**, Docketed 29 April 2015, 1 page. Color front cover of the 24 September 2014 issue of *Science Magazine* (Courtesy Alex Cannara, Ph.D.) showing the unprecedented declines in the California water table since 2002, as measured by NASA's GRACE mission. These declines are caused by the epic California drought, which has been exacerbated by global warming. Nuclear power could run California desalination stations to compensate for this loss without adding emissions.

**TN 204516** Docketed 06 May 2015, 237 pages. Transcript for the 27 April 2015 Nuclear Joint Lead Commissioner Workshop held in Sacramento, California. Dr. Gene Nelson's comments appear on pages 200-203, Mr. Bill Gloege's comments on pages 203-207, Joseph Ivora's on pages 206-207, and Dr. Alex Cannara, who supports CGNP, has comments on pages 213-218.

**TN 204522** Docketed 07 May 2015, 7 pages, including summary. DCP is important to California power grid stability - Rebuttal to the California ISO submission TN 204323 - Part 1 of 2. A 2004 Western Area Power Administration (WAPA) "Path 15" press release is annotated to show the power transmission lines connecting DCP to PG&E's Helm Pumped Storage Unit. DCP is the largest California power generation facility and Helms is one of the top ten facilities. During the night hours, emissions-free power from DCP may be employed to "charge up" Helms pumped storage. Then, during the day, Helms may generate the approximate emissions-free power of an additional DCP reactor (typically accompanied by DCP's twin reactors) to power the California grid. Emissions to generate California's electric power would be dramatically increased if DCP were forced to shut down.

**TN 204530**, Docketed 07 May 2015, 5 pages, including summary. DCP is important to California power grid stability - Rebuttal to the California ISO submission TN 204323 - Part 2 of 2. The table, "2013 Total System Power in Gigawatt Hours" from the California Energy Almanac (CEA) is re-organized to highlight power generation by emissions-free generation sources in contrast to the sources that emit emissions that exacerbate global warming and diminish air quality. Note the significant contribution to in-state emissions-free power generation from nuclear power. In 2013, 100% of the nuclear power generated in California came from DCP. On the other hand, the contributions of dirty out-of-state coal power generation was approximately equal to the annual power generation of SONGS in recent years. The out-of-state air pollution from burning coal drifts into California. This statistic rebuts the interruption of my

CEC citizen testimony during the 27 April 2015 CEC hearing in Sacramento by apparent natural gas advocate and CEC Chair Robert B. Weisenmiller, Ph.D. The second spreadsheet highlights the "Top 10" California power generation facilities, extracted from a CEA tabulation. DCPD is number 1. Helms Pumped Storage is in the "Top 10." The third spreadsheet details the low capacity factor (CF) of natural-gas-powered Moss Landing in comparison with DCPD. **DCPD's CF is almost three times that of Moss Landing.** These spreadsheets underscore the serious dimensions that a loss of DCPD power would cause.

**TN 204551**, Docketed 08 May 2015, 3 pages. A 20 April 2015 article from *PG&E Currents* that summarizes a recent meeting between executives at Japan's Chubu Electric Power Company and DCPD executives. This article underscores the dimensions of the positive DCPD nuclear safety culture which the executives of the third-largest power company in Japan wish to emulate.

**TN 204560**, Docketed 11 May 2015, 5 pages, including summary. Details, including the complete text of Governor Brown's Executive Order B-30-15. The political barriers to the expansion of the use of nuclear power will need to be taken down in order to comply with Governor Brown's 29 April 2015 executive order. As a consequence of their low capacity factors, solar and wind power are not cost-effective. Burning more natural gas or coal just increases global warming, contrary to the intent of this executive order.

**TN 204561**, Docketed 11 May 2015, 1 page by CGNP member Joe Ivora. Power-intensive desalination stations, such as the one under construction in Carlsbad, CA should be powered by emissions-free nuclear power plants.

**TN 204562**, Docketed 11 May 2015, 48 pages with summary. Relevant chapters of the California Central Coast Seismic Imaging Project (CCCSIP) are merged into a single document. This paragraph is a rebuttal to the overblown concern highlighted by Attorney John Geesman in his 08 May 2015 Docket entry TN 204546 at page 3 of 46: The CCCSIP information has been carefully reviewed by the NRC and their panel of seismologists. Dr. Hamilton's views are anomalous among most geologists that have studied the seismic potential of features underlying or near DCPD. It is likely that Dr. Hamilton receives "things of value" from DCPD opponents, as do several other Ph.D.s recruited by the opposition. The CEC should also be reminded of the bias that Attorney John Geesman received intervenor compensation as high as \$545.00/hour, as noted in TN 204275. Per the PUC Intervenor Rate table updated 29 October 2014, Rochelle Becker received as much as \$125.00 per hour

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CCCSIP studies have also addressed the testimony of Dr. Douglas Hamilton concerning a previously recognized fault mapped under the DCPD turbine building and the Unit 1 containment (Diablo Cove fault), and a proposed fault named the San Luis Range/Inferred Offshore Fault (SLR/IOF). Through review of previously collected information about the Diablo Cove fault from the original siting and preconstruction activities supplemented with recently collected geologic map data and high-resolution 3D seismic –reflection data collected as part of the CCCSIP indicate that the Diablo Cove fault does not represent a seismic hazard (e.g. vibratory ground motion or surface faulting) to the DCPD. Analysis of high-resolution 2D and 3D seismic-reflection data, seismicity and potential field data does not support the SLR/IOF as proposed by Dr. Hamilton. ("Hamilton" appears 13 times in the docketed document. )

**TN 204564** Docketed 11 May 2015,2 pages by CGNP member and founder William Gloege. This docket entry summarizes the need for DCPD to meet pressing needs in California.

**TN 204565** Docketed 11 May 2015,1 page by CGNP member Anthony Armini, Ph.D. California's likely economic harms caused by a potential DCPD shutdown are highlighted by noting recent economic losses in the German economy as they turned from nuclear to solar, wind, and fossil fuel power.

**TN 204566** Docketed 11 May 2015,2 pages with summary. The complementary role of PG&E's Helms Pumped Storage facility to DCPD is summarized in this one-page **PG&E currents** article. Both DCPD and Helms (when powered by DCPD) are zero- emissions power generators.

**TN 204570** Docketed 11 May 2015,1 page by CGNP member Anthony Armini, Ph.D Dr. Armini makes the case that it would be far less expensive to repair the steam generator problem at San Onofre Nuclear Generating Station (SONGS) instead of permanently decommissioning the plant.

**TN 204581** Docketed 11 May 2015,5 pages with summary. Dr. James Conca provides additional documentation regarding the high reliability of nuclear power in an article published on his Forbes.com blog today.

**TN 204583** Docketed 11 May 2015,6 pages with summary. In response to some extremely vocal critics of dry cask storage who are neither metallurgists nor nuclear engineers, a National Public Radio (NPR) article from 2012 is included as rebuttal with some included listener comments regarding nuclear waste politics.

**Total page count: 231 pages.**

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<u>TN</u>	<u>Docketed Date</u>	<u>Document Title</u>	<u>Exhibit #</u>	<u>To</u>	<u>From</u>
203964	3/26/2015	<a href="#">Gene Nelson, Ph.D. Comments: The Californians for Green Nuclear Power (CGNP) Advocates for Adoption of the SWRCB "Appendix A" amendments for DCPD</a>  Air Quality, Efficiency, Compliance, Reliability, Transmission System Engineering, Greenhouse Gases 2 page(s)		CEC/Docket Unit	Gene Nelson, Ph.D.
204274	4/21/2015	<a href="#">Gene Nelson, Ph.D. Comments: Californians for Green Nuclear Power Board-Approved Submission</a>  Air Quality, Biological Resources, Efficiency, Executive Summary, Facility Design, Compliance, Geology/Paleontology, Reliability, Transmission Line Safety and Nuisance, Greenhouse Gases, _IEPR 2015-04-27 Workshop , _IEPR Presentation, _IEPR Public Comments  2 page(s)		CEC/ Docket Unit	Gene Nelson, Ph.D.
204275	4/21/2015	<a href="#">Californians for Green Nuclear Power (CGNP) February 3, 2015 Board-Approved Packet</a>		CEC/Docket Unit	Gene Nelson, Ph.D.



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204278	4/21/2015	45 page(s) <a href="#">Energy Institute at Haas - The Value of Transmission in Electricity Markets: Evidence from a Nuclear Power Plan Closure</a>		CEC/Docket Unit	Gene Nelson, Ph.D
204314	4/23/2015	66 page(s) <a href="#">Gene Nelson, Ph.D. Comments: DCP's High Capacity Factor Makes the Plant a Critical Factor in Grid Stability</a>		CEC/Docket Unit	Gene Nelson, Ph.D.
		Air Quality, Efficiency, Land Use, Reliability, Transmission System Engineering, Greenhouse Gases, _IEPR 2015-04-27 Workshop , _IEPR Public Comments			
204381	4/27/2015	5 page(s) <a href="#">Gene Nelson, Ph.D. Comments: Sample of Media Coverage Regarding Californians for Green Nuclear Power (CGNP)</a>		CEC/Docket Unit	Gene Nelson, Ph.D.
		Air Quality, Geology/Paleontology, Reliability, Transmission System Engineering, Greenhouse Gases, _IEPR 2015-04-27 Workshop , _IEPR Agenda , _IEPR Public Comments			
204426	4/29/2015	10 page(s) <a href="#">Gene Nelson, Ph.D. Comments: California Governor Brown Announces Ambitious New Emissions Targets</a>			Gene Nelson, Ph.D.

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204427	4/29/2015	Biological Resources, Noise and Vibration, Visual Resources, Greenhouse Gases, _IEPR 2015-04-27 Workshop , _IEPR Public Comments 4 page(s) <a href="#">Gene Nelson, Ph.D. Comments: Wind Energy is not the path to Emissions-Free Power - Nuclear Is</a>			Gene Nelson, Ph.D
204429	4/29/2015	Air Quality, Biological Resources, Land Use, Noise and Vibration, Visual Resources, Greenhouse Gases, _IEPR 2015-04-27 Workshop , _IEPR Public Comments 6 page(s) <a href="#">Gene Nelson, Ph.D. Comments: The NRC Reaffirms DCCP's Seismic Safety 28 April 2015</a>		CEC/Docket Unit	Gene Nelson, Ph.D.
204430	4/29/2015	Air Quality, Biological Resources, Facility Design, Geology/Paleontology, Reliability, Transmission System Engineering, Greenhouse Gases, _IEPR 2015-04-27 Workshop , _IEPR Public Comments 4 page(s) <a href="#">Science the Drought You Can't See</a> 1 page(s)		CEC/ Raquel Kravitz	Gene A. Nelson, Ph.D

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204522	5/7/2015	<a href="#">Gene Nelson, Ph.D. Comments: DCPD is important for Grid Stability Part 1 - Rebuttal to California ISO</a>  Facility Design, Reliability, Transmission System Engineering, _IEPR 2015-04-27 Workshop , _IEPR Presentation 7 page(s)		CEC/Docket Unit	Gene Nelson, Ph.D.
204530	5/7/2015	<a href="#">Gene Nelson, Ph.D. Comments: DCPD is important for Grid Stability Part 2 - Rebuttal to California ISO</a>  Air Quality, Efficiency, Facility Design, Reliability, Socioeconomics, Transmission Line Safety and Nuisance, Transmission System Engineering, Greenhouse Gases, _IEPR 2015-04-27 Workshop , _IEPR Presentation, _IEPR Public Comments 5 page(s)		CEC/ Docket Unit	Gene Nelson, Ph.D.
204551	5/8/2015	<a href="#">Gene Nelson, Ph.D. Comments: Japan's Chubu Electric Power Company -</a> Looks to Diablo Canyon for Best Practices in Assessing Risk, Seismic Safety Air Quality, Efficiency, Facility Design, Geology/Paleontology, Reliability, Transmission System Engineering, Greenhouse Gases, _IEPR 2015-04-27 Workshop 3 page(s)		CEC/Docket Unit	Gene Nelson, Ph.D.

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204560	5/11/2015	<a href="#">Gene Nelson, Ph.D. Comments: Governor Brown Establishes Most Ambitious Greenhouse Gas Reduction Target in North America</a>  Air Quality, Public Health, Reliability, Socioeconomics, Greenhouse Gases, _IEPR 2015-04-27 Workshop 5 page(s)		CEC/Docket Unit	Gene Nelson, Ph.D.
204561	5/11/2015	<a href="#">Joseph S. Ivora Comments: California future water</a>  1 page(s)		CEC/Docket Unit	Joseph S. Ivora
204562	5/8/2015	<a href="#">Gene Nelson, Ph.D. Comments: DCP's Seismic Risk is bounded by the Predicted Energy Released by Hosgri Fault</a>  Facility Design, Geology/Paleontology, _IEPR 2015-04-27 Workshop , _IEPR Public Comments 48 page(s)		CEC/Docket Unit	Gene Nelson, Ph.D.
204564	5/11/2015	<a href="#">William P. Gloege Comments: Need for Diablo Canyon and Role of Nuclear Power in California</a>  _IEPR 2015-04-27 Workshop 2 page(s)		CEC/Docket Unit	William P. Gloege
204565	5/10/2015	<a href="#">Anthony Armini Comments: Be careful not to wreck California's economy</a>		CEC/Docket Unit	Anthony Armini

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204566	5/11/2015	<p>_IEPR 2015-04-27 Workshop 1 page(s)</p> <p><a href="#">Gene Nelson, Ph.D. Comments: Helms Pumped Storage Operates in Conjunction with DCPD to Provide Emissions-Free Power</a></p> <p>Air Quality, Efficiency, Facility Design, Reliability, Transmission System Engineering, Greenhouse Gases, _IEPR 2015-04-27 Workshop , _IEPR Public Comments</p> <p>2 page(s)</p>		CEC/Docket Unit	Gene Nelson, Ph.D.
204570	5/11/2015	<p><a href="#">Anthony Armini PhD Comments: Fixing San Onofre is cheaper than closing it</a></p>		CEC/Docket Unit	Anthony Armini PhD
204581	5/11/2015	<p>_IEPR 2015-04-27 Workshop 1 page(s)</p> <p><a href="#">Gene Nelson, Ph.D. Comments: James Conca Ph.D. 11 May 2015 Article about Nuclear's High Capacity Factor</a></p> <p>Air Quality, Efficiency, Reliability, Transmission System Engineering, Greenhouse Gases, _IEPR 2015-04-27 Workshop , _IEPR Public Comments</p> <p>5 page(s)</p>		CEC/ Docket Unit	Gene Nelson, Ph.D.

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204583	5/11/2015	<a href="#">Gene Nelson, Ph.D. Comments: NPR Reported on the safety of dry cask storage 13 June 2012</a>  Facility Design, Public Health, Reliability, Waste Management, _IEPR 2015-04-27 Workshop , _IEPR Public Comments 6 page(s)		CEC/Docket Unit	Gene Nelson, Ph.D.

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